WHAT IS CLAIMED IS:

1.   A learning system comprising:

dialog means for obtaining the name of an object from the user through a dialog with said user;

plural recognizing means for detecting a plurality of feature data of said object respectively, and for recognizing the above object based on the above detection result and the learning result of said corresponding feature data of a known object previously stored;

storing means for storing relation information in that said name of said known object is connected with the recognition result of the above known object by each of said recognizing means; and

control means, if determining that said object is a new object based on the name of said object obtained by said dialog means, the recognition result of the above object by each of said recognizing means, and said relation information stored in said storing means, for making said needed recognizing means perform the learning of said corresponding feature data of the above object, and making said storing means newly store thus obtained relation information on the above object.

2.   The learning system according to claim 1, wherein:

said control means manages the learning achievement degrees of said known object by said respective recognizing means; and

if said control means determines that said object is a known

50

object based on the name of said object obtained by said dialog means, the recognition results of the above object by said respective recognizing means, and said relation information stored in said storing means, the control means makes said predetermined recognizing means that is determined based on said learning achievement degrees of the above object by said respective recognizing means perform the learning of said corresponding feature of the above object, and updates said corresponding relation information according to thus obtained new learning achievement degree by said recognizing means that performed the learning.

3.   The learning system according to claim 1, wherein;
      each of said recognizing means starts collecting learning data for performing the learning of said corresponding feature of the above object before said dialog means obtains said name of said object, and performs the learning of said corresponding feature of said object with the above collected learning data.

4.   The learning system according to claim 3, wherein;
      even if each of said recognizing means could not collect a predetermined amount of said learning data, it performs the learning of said corresponding feature of said object with the above collected learning data.

5.   The learning system according to claim 1, wherein;

if the learning of said corresponding feature of said object is stopped in the middle of the learning, each of said recognizing means stores the above halfway learning result until that time, and starts the next learning of said corresponding feature of the above object from the above halfway point.

6.   The learning system according to claim 1, wherein:

said object is said user being the other party of the dialog; and

if the learning of said user by one or all of said recognizing means is insufficient, said dialog means executes the processing to prolong the dialog with said user.

7.   The learning system according to claim 6, wherein;

to prolong the dialog with said user, said dialog means executes the processing to make a dialog so that said recognizing means insufficient in the learning of said object easily perform that learning.

8.   The learning system according to claim 2, wherein;

said control means makes said predetermined recognizing means that is determined based on said learning achievement degree of said object by each of said recognizing means start the learning of said corresponding feature of the above object, from the state

according to the present learning achievement degree of the above object by the above recognizing means.

9.   The learning system according to claim 8, wherein:

said control means makes said storing means store data for the present learning achievement degree by each of said recognizing means, and manages the learning achievement degrees; and

said control means or said storing means performs time attenuation to said learning achievement degrees.

10.   A learning method comprising:

the first step for obtaining the name of an object from the user through a dialog with said user, and for recognizing the above object based on the detection result of a plurality of feature data of said object and the learning results of said respective features of said known object previously stored; and

the second step, if it is determined that said object is a new object based on the obtained name of said object, the recognition results based on said respective feature data of the above object, and relation information in that said name of said known object is connected with the recognition results of said respective feature data of the above known object, for performing the learning of said needed feature data of the above object, and newly storing thus obtained relation information

on the above object.

11.   The learning method according to claim 10, wherein:

in said first step, the learning achievement degrees of said respective futures of said known object are managed; and

in said second step, if it is determined that said object is a known object based on the obtained name of said object, the recognition results of said respective features of the above object, and said stored relation information, the learning of said predetermined feature which is determined based on said learning achievement degrees of said respective features of the above object is performed, and said corresponding relation information is updated according to thus obtained new learning achievement degree of the above feature.

12.   The learning method according to claim 10, wherein:

in said first step, collecting learning data for performing the learning of said respective features of the above object is started before said name of said object is obtained; and

in said second step, the learning of said respective features of said object is performed with the above collected learning data.

13.   The learning method according to claim 12, wherein;

in said second step, even if a predetermined amount of said learning data could not be collected, the learning of said

corresponding feature of said object is performed with the above collected learning data.

14.   The learning method according to claim 10, wherein:

in said second step, if the learning of said corresponding feature of said object is stopped in the middle of the learning, the above halfway learning result until that time is stored; and

the next learning of said corresponding feature of the above object is started from the above halfway point.

15.   The learning method according to claim 10, wherein:

said object is said user being the other party of the dialog; and

in said second step, if the learning of one or all of said features of said user is insufficient, the processing to prolong the dialog with said user is performed.

16.   The learning method according to claim 15, wherein;

to prolong the dialog with said user, the processing to make a dialog so that the learning of said feature, insufficient in the learning, of said object can be easily performed.

17.   The learning method according to claim 11, wherein:

in said second step, the learning of said predetermined feature of said object determined based on said learning

achievement degrees of said respective features of said object is

started from the state according to the present learning

achievement degree of the above feature.

18.   The learning method according to claim 11, wherein;

       time attenuation is performed to said learning achievement

degrees.

19.   A robot apparatus comprising:

       dialog means for obtaining the name of an object from the

user through a dialog with said user;

       plural recognizing means for detecting the predetermined

different features of said object respectively, and for

recognizing the above object based on the above detection result

and the learning result of said corresponding feature of said

known object previously stored;

       storing means for storing relation information in that said

name of said known object is connected with the recognition result

of the above known object by each of said recognizing means; and

       control means, if determining that said object is a new

object based on the name of said object obtained by said dialog

means, the recognition result of the above object by each of said

recognizing means, and said relation information stored in said

storing means, for making said needed recognizing means perform

the learning of said corresponding feature of the above object,

and making said storing means newly store thus obtained relation information on the above object.

20.   The robot apparatus according to claim 19, wherein:

said control means manages the learning achievement degrees of said known object by said respective recognizing means; and

if said control means determines that said object is a known object based on the name of said object obtained by said dialog means, the recognition results of the above object by said respective recognizing means, and said relation information stored in said storing means, the control means makes said predetermined recognizing means that is determined based on said learning achievement degrees of the above object by said respective recognizing means perform the learning of said corresponding feature of the above object, and updates said corresponding relation information according to thus obtained new learning achievement degree by said recognizing means that performed the learning.

21.   The robot apparatus according to claim 19, wherein;

each of said recognizing means starts collecting learning data for performing the learning of said corresponding feature of the above object before said dialog means obtains said name of said object, and performs the learning of said corresponding feature of said object with the above collected learning data.

22.   The robot apparatus according to claim 21, wherein;

even if each of said recognizing means could not collect a predetermined amount of said learning data, it performs the learning of said corresponding feature of said object with the above collected learning data.

23.   The robot apparatus according to claim 19, wherein;

if the learning of said corresponding feature of said object is stopped in the middle of the learning, each of said recognizing means stores the above halfway learning result until that time, and starts the next learning of said corresponding feature of the above object from the above halfway point.

24.   The robot apparatus according to claim 19, wherein:

said object is said user being the other party of the dialog; and

if the learning of said user by one or all of said recognizing means is insufficient, said dialog means executes the processing to prolong the dialog with said user.

25.   The robot apparatus according to claim 24, wherein;

to prolong the dialog with said user, said dialog means executes the processing to make a dialog so that said recognizing means insufficient in the learning of said object easily perform

that learning.

26.   The robot apparatus according to claim 20, wherein;
said control means makes said predetermined recognizing means
that is determined based on said learning achievement degree of
said object by each of said recognizing means start the learning
of said corresponding feature of the above object, from the state
according to the present learning achievement degree of the above
object by the above recognizing means.

27.   The robot apparatus according to claim 26, wherein:
said control means makes said storing means store data for
the present learning achievement degree by each of said
recognizing means, and manages the learning achievement degrees;
and
said control means or said storing means performs time
attenuation to said learning achievement degrees.